System 0100

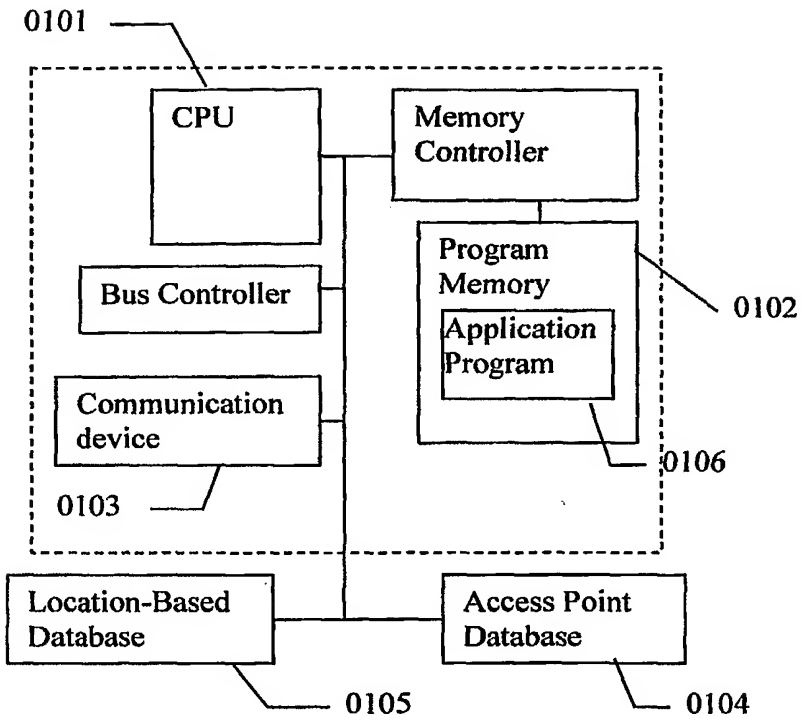
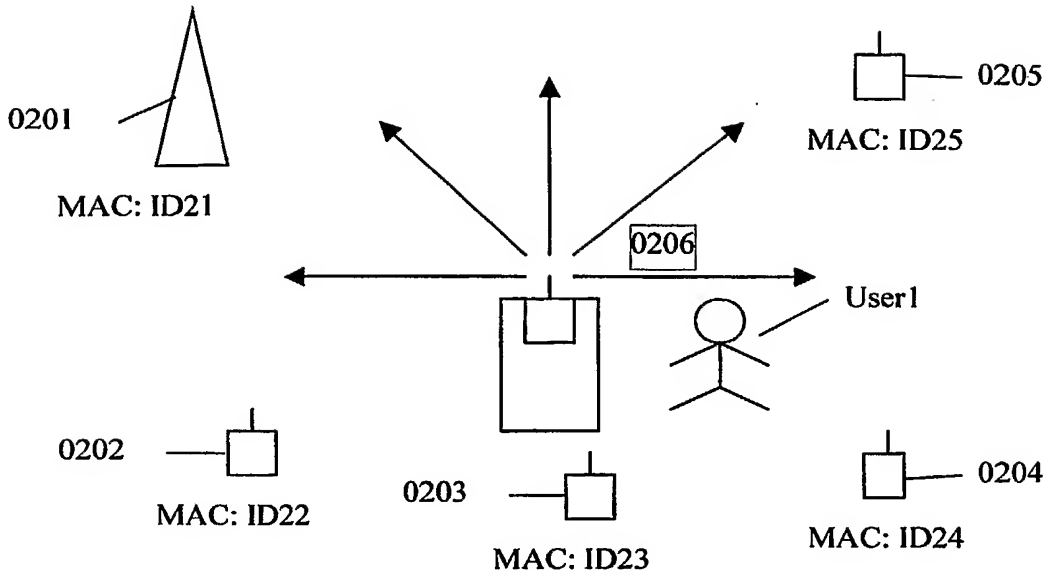


FIG 1


0201
MAC: ID21
0205
MAC: ID25
0206
User1
0202
MAC: ID22
0203
MAC: ID23
0204
MAC: ID24

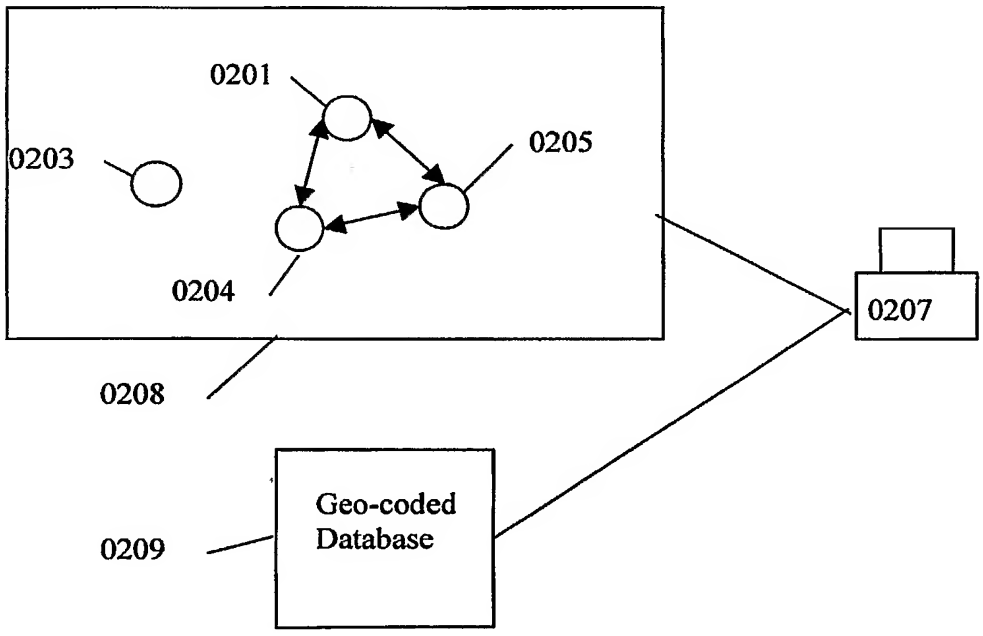

0201
0203
0205
0204
0207
0208
0209
Geo-coded
Database

FIG 2

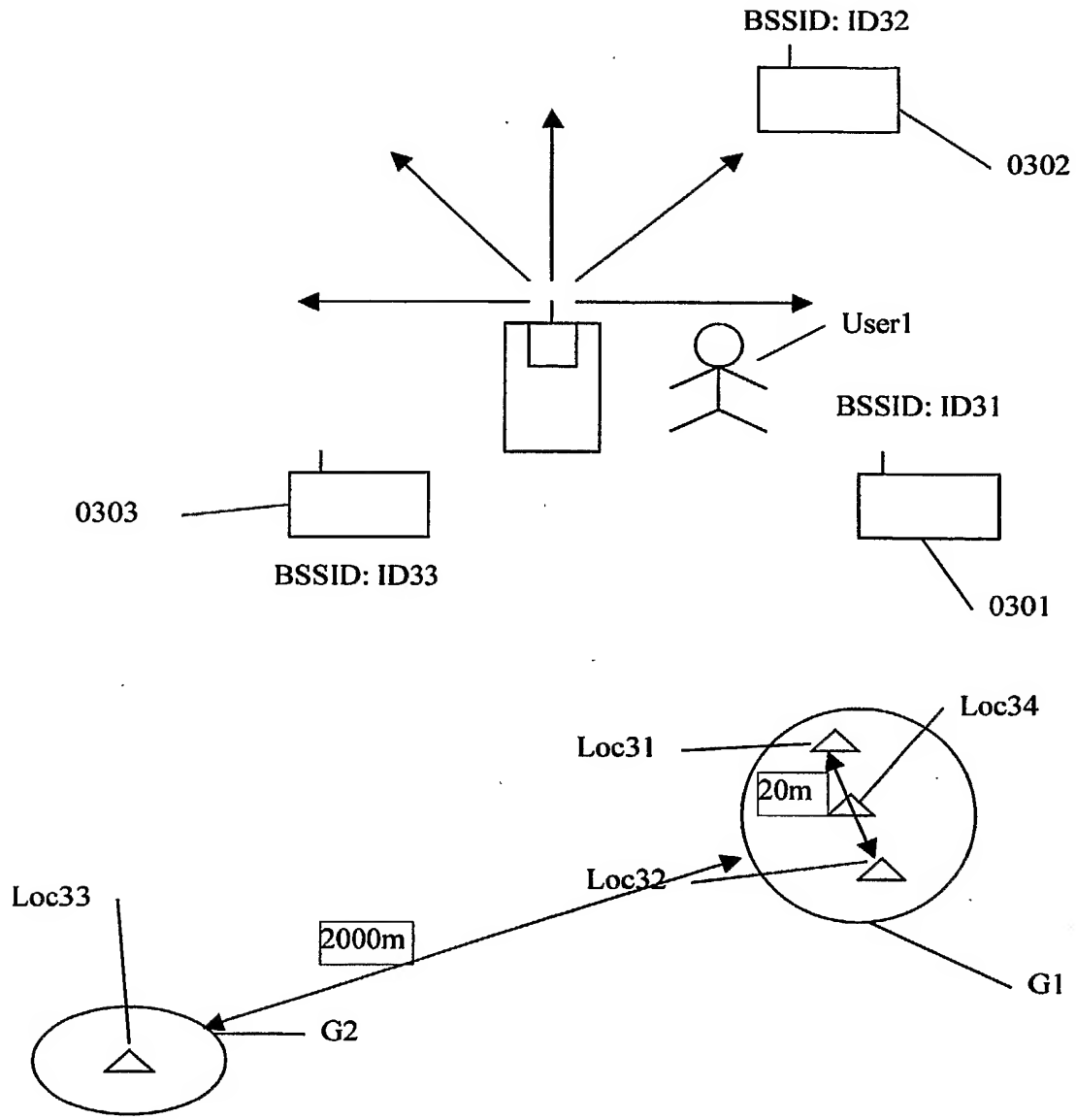

BSSID: ID32
0302
User1
BSSID: ID31
0303
BSSID: ID33
0301
Loc34
Loc31
20m
Loc32
Loc33
2000m
G1
G2

FIG 3

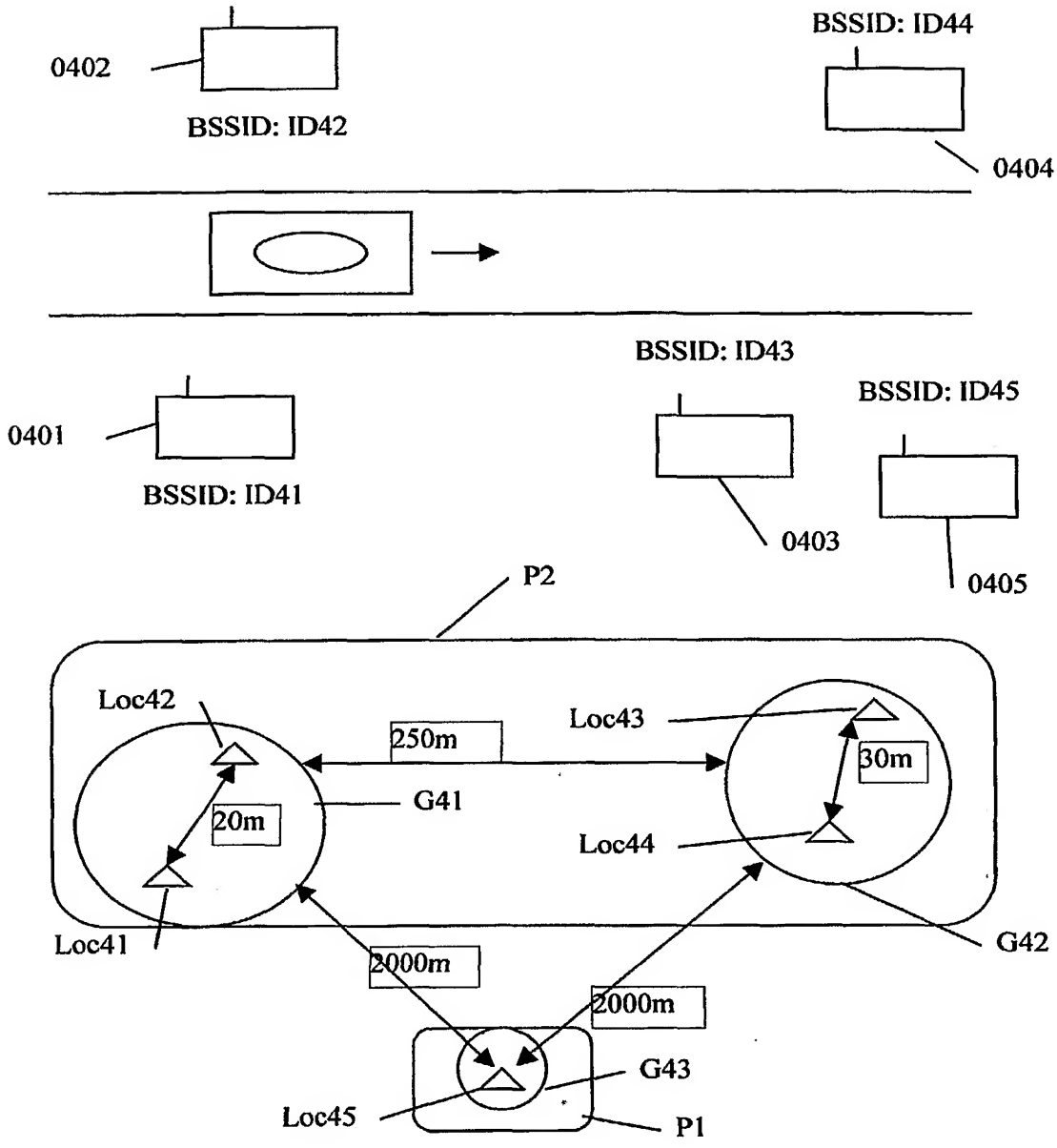

0402
BSSID: ID42
BSSID: ID44
0404
BSSID: ID43
BSSID: ID45
0401
BSSID: ID41
0403
0405
P2
Loc42
250m
Loc43
30m
G41
20m
Loc44
Loc41
G42
2000m
2000m
G43
Loc45
P1

FIG 4

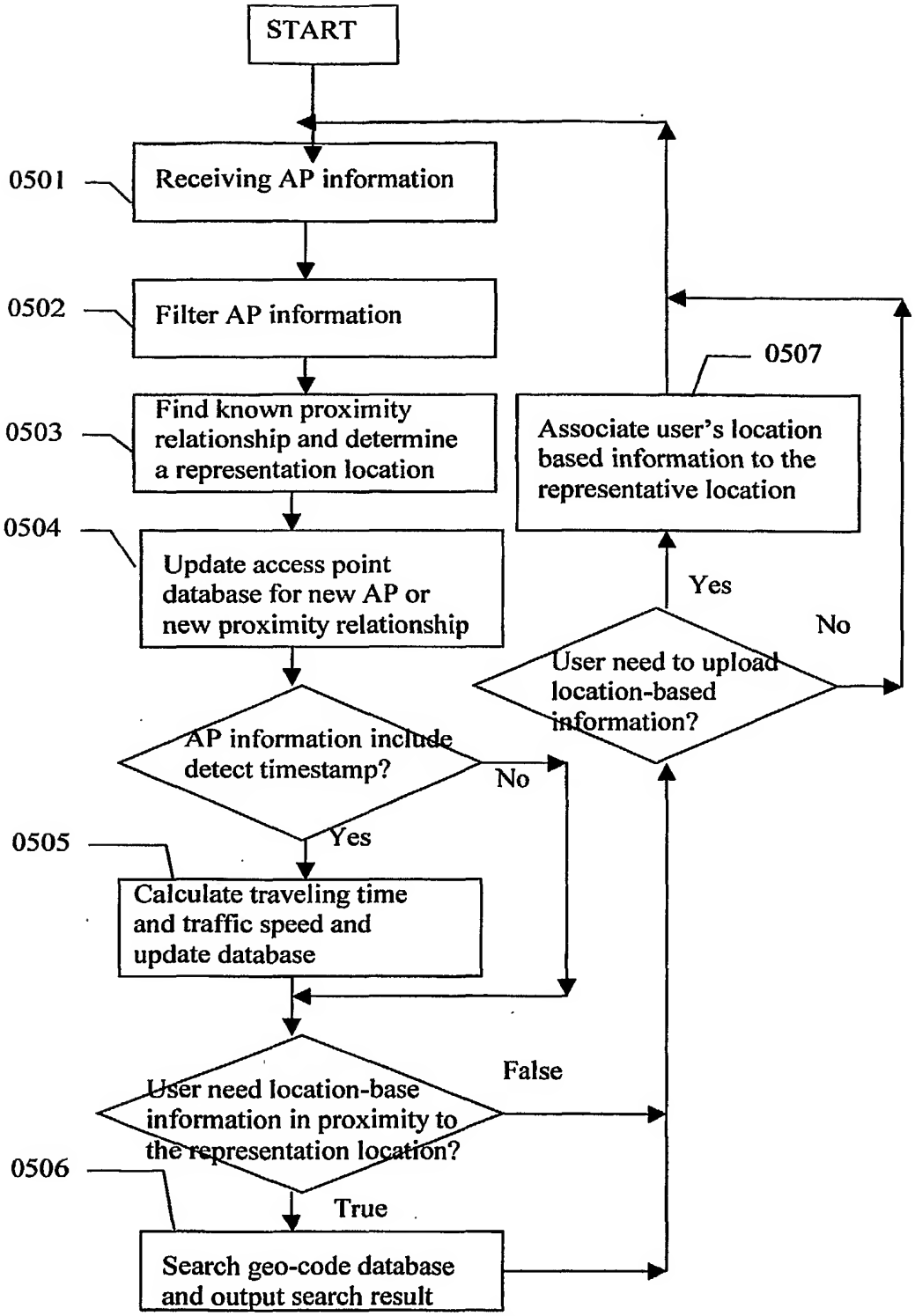

START
0501
Receiving AP information
0502
Filter AP information
0503
Find known proximity relationship and determine a representation location
0504
Update access point database for new AP or new proximity relationship
AP information include detect timestamp?
No
Yes
0505
Calculate traveling time and traffic speed and update database
User need location-base information in proximity to the representation location?
False
0506
True
Search geo-code database and output search result
0507
Associate user's location based information to the representative location
Yes
No
User need to upload location-based information?

FIG 5

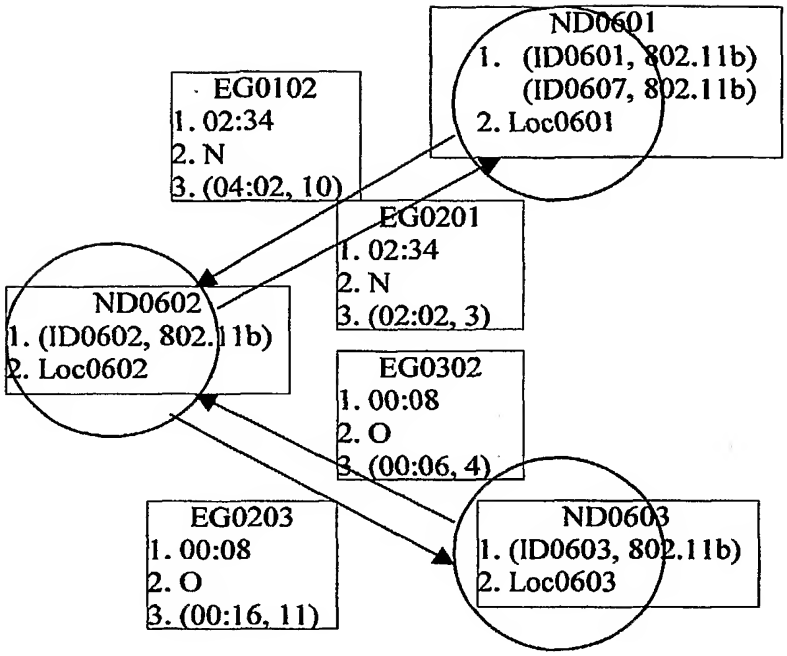

ND0601
1. (ID0601, 802.11b)
(ID0607, 802.11b)
2. Loc0601
EG0102
1. 02:34
2. N
3. (04:02, 10)
EG0201
1. 02:34
2. N
3. (02:02, 3)
ND0602
1. (ID0602, 802.11b)
2. Loc0602
EG0302
1. 00:08
2. O
3. (00:06, 4)
EG0203
1. 00:08
2. O
3. (00:16, 11)
ND0603
1. (ID0603, 802.11b)
2. Loc0603

FIG 6

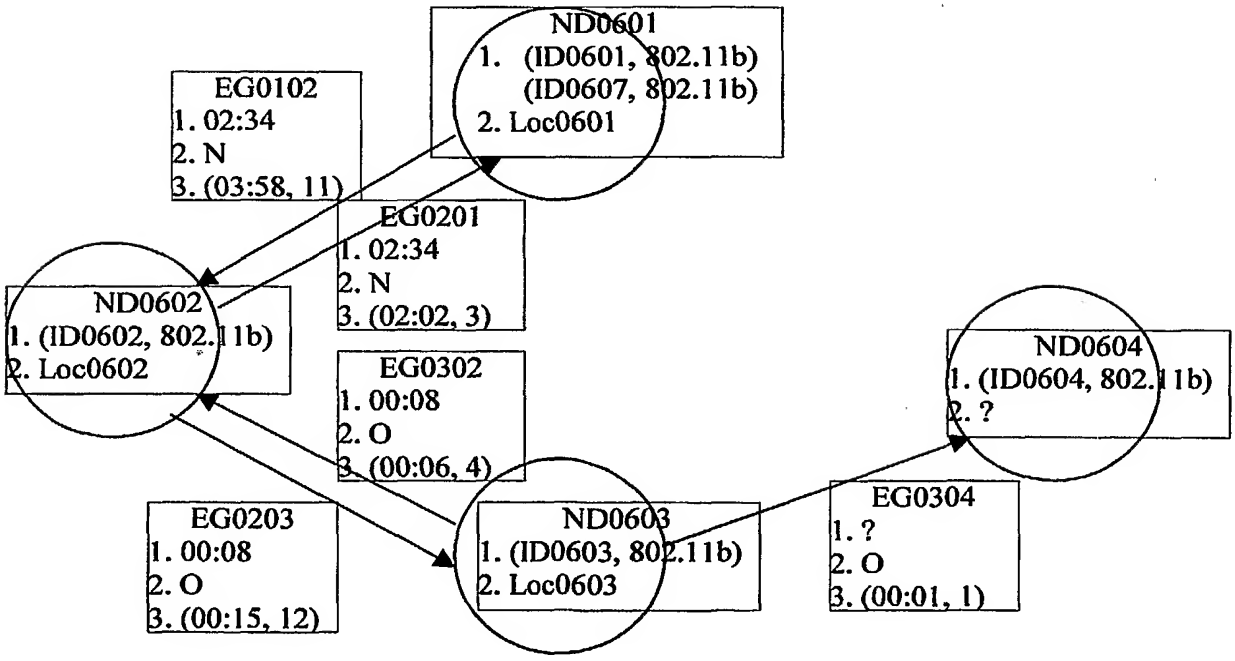

ND0601
1. (ID0601, 802.11b)
(ID0607, 802.11b)
2. Loc0601
EG0102
1. 02:34
2. N
3. (03:58, 11)
EG0201
1. 02:34
2. N
3. (02:02, 3)
ND0602
1. (ID0602, 802.11b)
2. Loc0602
EG0302
1. 00:08
2. O
3. (00:06, 4)
ND0604
1. (ID0604, 802.11b)
2. ?
EG0203
1. 00:08
2. O
3. (00:15, 12)
ND0603
1. (ID0603, 802.11b)
2. Loc0603
EG0304
1. ?
2. O
3. (00:01, 1)

FIG 7